

COLORADO RIVER RECOVERY PROGRAM
FY 2000 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 19b

I. Project Title: General Hydrology Support

II. Principal Investigator: George Smith
P.O. Box 25486, Denver, Colorado 80225-0486
E-mail: george_smith@fws.gov
Phone: (303) 236-5322, ext. 235
Fax: (303) 236-4224

III. Project Summary:

The Service's Division of Water Resources provides basic hydrology support to Recovery Program researchers and undertakes tasks to support the Recovery Program in basic data collection and monitoring projects. Accomplishments during FY 2000 include; 1) collecting temperature data at ten sites on the Green River and four sites on the Colorado River, and assembling a temperature database for use by Program researchers; 2) coordinating contracting for Yampa River sediment monitoring; 3) providing technical hydrology support for a wide range of Recovery Implementation Program activities on a year-to-year basis; and 4) coordinating other Recovery Program efforts relating to hydrology and temperature analysis.

IV. Study Schedule: Initial Year - 1990, Final Year - Ongoing.

V. Relationship to RIPRAP: Colorado and Green River Action Plans I.
Provide and protect instream flows.

VI. Accomplishments of FY 2000 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

A. Temperature Data Collection

Temperature data collection during FY-2000 went well, no thermographs were stolen and very little data were lost from thermographs being out of the water at the lowest flow conditions since 1994. The thermograph in Mitten Park was out of the water for a short period of time during late summer, a third thermograph was installed on an overhang nearby as a backup. The current protocol is to deploy two thermographs at each location, each hidden in a different location, to compensate for the malfunctions and theft. Low flows in 2000 turned out to be an additional complicating factor; fortunately over the year we have been able to find locations that function at both low and high flows.

A great deal of time was spent in FY 2000 organizing the temperature data collected since 1990 by river, location, and year. Once this reorganization was accomplished, a spreadsheet was constructed for each location and data were

copied into a different yearly sheet. Each year was plotted, and graphs prepared and the data checked. The spreadsheets were then web enabled and linked to the Riverdata Web Page. The temperature data can be accessed and downloaded from the riverdata web page at <http://www.r6.fws.gov/riverdata/> or by email request from FWS Division of Water Resources (address above). During the process of developing the spreadsheets, a decision was made to present the data for 2000 and beyond on a water year basis, which works best with the way the thermographs are maintained and data are downloaded three times per year in March, July, and October. A photo was included on the web page to display the general location of each thermograph.

B. Hydrology Support for Biological Opinions:

The Division of Water Resources monitored endangered fish releases from Flaming Gorge, Ruedi, and the Aspinall Unit during the spring runoff and post runoff period. The interest of the Recovery Program was represented at the quarterly operational meetings, and input was provided on flow patterns and protection of water for endangered fish. The Division of Water Resources also provided support to researchers working on flow recommendations for the Aspinall Unit. Specific work accomplished is addressed under the appropriate work task below.

Gunnison River Synthesis Documents:

The Division of Water Resources continued to provide support in developing data for the synthesis, and worked with Chuck McAda in developing the flow and temperature analysis for the Gunnison River .

Colorado River Programmatic Biological Opinion:

A considerable amount of effort was spent under this task. The Division of Water Resources worked closely with the CWCB staff to provide support in developing data, refining the baseline, and reviewing model runs for the Colorado River Programmatic Opinion.

C. Hydrology Support for Development of Flow Recommendations:

With the withdrawal of the instream filings for the Colorado and Yampa rivers, very little work was required in relation to the development and support of flow recommendations:

Yampa River Operation and Management Plan:

The Division of Water Resources provided assistance to the Program Director's Office by coordinating meetings, developing scopes of work for gaging, hydrology model review, and developing annual project reports. The Division of

Water Resources also supported the Yampa Plan by reviewing documents and attending Hydrology work group meetings.

Continued work in developing a report on the 1999 Channel Monitoring work conducted at the Echo Park/Yampa Canyon razorback sucker spawning bar. Pulling the data and graphics together for the report has taken much longer than expected because of other higher priority work items. The report will be available for review by the end of April 2001.

VII. Recommendations:

The work provided is, for the most part, in support of other research projects or activities such as flow delivery, flow quantification, and habitat restoration, all of which have a direct impact on the recovery of the Colorado River endangered fish. The direct quantification of the success of many of the activities is difficult because most of the activities are long-term in nature.

VIII. Project Status: Ongoing and on-track.

IX. FY 2000 Budget Status:

A. Funds provided: \$ 48,000
B. Funds expended: \$ 48,000
C. Difference: \$ 0

X. Status of Data Submission: Not applicable.

XI.	Signed: <u>George Smith</u>	<u>December 8, 2000</u>
	Principal Investigator	Date

APPENDIX: Reports, the temperature data collection, and database for water year 2000 will be placed on the Recovery Program's Home Page for access by researchers by December 31, 2000.